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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/589,079	08/11/2006	Gerhard Schiessl	8369.036.US0000	5876
77407 7590 01/05/2010 Novak Druce & Quigg LLP 1300 I Street NW Suite 1000 West Tower Washington, DC 20005				
EXAMINER VELASQUEZ, VANESSA T				
ART UNIT		PAPER NUMBER		
1793				
MAIL DATE		DELIVERY MODE		
01/05/2010		PAPER		

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/589,079

Applicant(s)

SCHIESSL, GERHARD

Examiner

Vanessa Velasquez

Art Unit

1793

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 22 October 2009.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 26-33 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 26-33 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/C)
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date: _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____
- Paper No(s)/Mail Date: _____

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on September 23, 2009 has been entered.

Status of Previous Rejections Under 35 USC § 112

The previous rejection of claims 26-32 under the first paragraph of 35 U.S.C. 112 is withdrawn in view of Applicant's remarks.

The previous rejection of claims 26-32 under the second paragraph of 35 U.S.C. 112 is moot in view of the amendments to the claims.

Claim Rejections - 35 USC § 112, Second Paragraph

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claim 31 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. There is insufficient antecedent basis for the limitation "said

separate heat treatments" in the claim. While it is understood that there are two heat treatments in independent claim 26, no phrase collectively refers to them as "separate heat treatments." It is suggested that "said" be deleted and replaced by "the" in order to clarify the language of claim 31.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

6. Claims 26-29, 32, and 33 are rejected under 35 U.S.C. 103(a) as being unpatentable over Grange (US 3,337,376) in view of Schmoeckel ("Metal Forming (Warm): Comparison with Hot and Cold Forming," Vol. 6, *Encyclopedia of Materials*), and further in view of Hodge et al. (US 3,057,050).

Regarding claims 26 and 32, Grange teaches a heat treatment method for enhancing the mechanical properties of hypereutectoid steels, including tool steels and

hardenable steels (col. 1, lines 39-48). The method comprises the following steps: (1) Austenitizing the steel (col. 2, lines 6-16); (2) Quenching the steel to transform the austenite to bainite (col. 2, lines 17-28); (3) Cooling the steel to room temperature (col. 2, lines 29-31); and (4) Reheating the steel to 1425-1600°F (774-871°C) to austenitize the steel (col. 2, lines 32-39; col. 2, lines 71-72 to col. 3, lines 1-6).

Still regarding claims 26 and 32, Grange teaches that the steels therein may be used to manufacture tools (col. 1, lines 46-48), but does not teach forming the steel while heated to form a tool (component). However, it is well known in the art to form components while in a heated state, as evidenced by Schmoeckel. Schmoeckel teaches that warm forming of steel, which generally occurs at temperatures between 600°C and 900°C, is advantageous because the flow stress of the material is lower, thus enabling the forming operation to be carried out with relative ease (p. 5438, paragraph 4). Therefore, it would have been obvious to one of ordinary skill in the art to have formed the tool steel of Grange while in a heated state because doing so would facilitate the forming process due to the lower flow stress needed to overcome to shape the component.

Further regarding claims 26 and 32, the steels of Grange do not have an aluminum coating layer thereon. However, coating steels with aluminum is well known in the art, as evidenced by Hodge et al. Hodge et al. teach that aluminum coatings have multiple beneficial functions such as protecting the substrate steel from undesirable corrosion and oxidation as well as enhancing the aesthetic properties of the surface of the steel (col. 1, lines 20-29). Aluminum coatings may be applied to many

types of steels, including structural alloy steels and tool steels (Hodge et al., col. 8, lines 15-21). Thus, it would have been obvious to one of ordinary skill in the art to have coated the tool steel of Grange with aluminum because aluminum coatings prevent the mechanical properties of the underlying steel from deteriorating as a result of corrosion and oxidation, as taught by Hodge et al.

Regarding claims 27 and 29, the austenitizing treatment of step (1) above occurs for 20 minutes (col. 4, lines 70-75 to col. 5, lines 1-6), which lies within the claimed range. The austenitizing treatment of step (4) above occurs for a maximum time of 5 minutes (col. 3, lines 11-18), which overlaps the claimed range. The overlap between the ranges taught in the prior art and recited in the claims creates a *prima facie* case of obviousness (MPEP § 2144.05).

Regarding claims 28 and 33, Grange in view of Schmoeckel further in view of Hodge et al. do not explicitly teach that the heat treatment of Grange would cause an aluminum coating to increase in thickness during a first heat treatment and then no longer grow during a second heat treatment. However, it has been well established that

"[w]here the claimed and prior art products are identical or substantially identical in structure or composition, or are produced by identical or substantially identical processes, a *prima facie* case of either anticipation or obviousness has been established" (*In re Best*, 562 F.2d 1252, 1255, 195 USPQ 430, 433 (CCPA 1977)).

See also MPEP § 2112.01. In the present instance, the sequence of heating steps, temperature conditions, and duration of heating times disclosed by Grange are substantially identical to that of the claims. Therefore, it naturally follows that an

aluminum coating placed upon the steel of Grange would be expected to grow in the same manner as claimed absent evidence to the contrary.

7. Claim 30 is rejected under 35 U.S.C. 103(a) as being unpatentable over Grange (US 3,337,376) in view of Schmoeckel ("Metal Forming (Warm): Comparison with Hot and Cold Forming," Vol. 6, *Encyclopedia of Materials*), and Hodge et al. (US 3,057,050), as applied to claim 26, and further in view of Hassell et al. ("Induction Heat Treating of Steel," Vol. 4, *ASM Handbooks*).

Regarding claim 30, Grange in view of Schmoeckel and Hodge et al. do not teach heating the sheet to different intensities at different locations. Hassell et al. teach that it is common to heat treat at selected locations of the surface of an alloy order to obtain a part that has varying mechanical properties (Hassell, "Selective Hardening"). A surface with different mechanical properties is sometimes required for applications where, for instance, the loading stresses vary or are uneven (Hassell, "Selective Hardening"). Therefore, it would have been obvious to one of ordinary skill in the art to heat the steel of Grange in view of Schmoeckel and Hodge et al. to different intensities at different locations in order to form a part with varying mechanical properties over its surface, as taught by Hassell et al., for a particular application.

8. Claim 31 is rejected under 35 U.S.C. 103(a) as being unpatentable over Grange (US 3,337,376) in view of Schmoeckel ("Metal Forming (Warm): Comparison with Hot

and Cold Forming," Vol. 6, *Encyclopedia of Materials*), and Hodge et al. (US 3,057,050), as applied to claim 26 above, and further in view of Brodt et al. (US 2002/0069506).

Regarding claim 31, Grange in view of Schmoeckel and Hodge et al. do not teach reinforcing the sheet between heat treatment steps. Brodt et al. teach that steel sheets may be reinforced by applying a similar or same steel material onto a base sheet in order to strengthen the base sheet at particular high-pressure points (para. [0050]). Reinforcements are often more desirable than manufacturing a thicker sheet, as reinforcements allow less material to be used, resulting in a sheet that remains strong but is also lightweight (Brodt et al., para. [0003]). Therefore, it would have been obvious to one of ordinary skill in the art to incorporate the reinforcing step of Brodt et al. into the process of Grange in view of Schmoeckel and Hodge et al. because it decreases manufacturing material costs while providing a steel sheet of sufficient strength.

Response to Arguments

9. Applicant's arguments have been considered but are moot in view of the new grounds of rejection.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Vanessa Velasquez whose telephone number is 571-270-3587. The examiner can normally be reached on Monday-Friday 9:00 AM-6:00 PM ET.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Roy King, can be reached at 571-272-1244. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Roy King/
Supervisory Patent Examiner, Art
Unit 1793

/Vanessa Velasquez/
Examiner, Art Unit 1793

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